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Dr. G. Bertani
Department of Bacteriology
University of Illinois
Urbana, Illinois

Dear Joe:

Thank you for so promptly replying to my letter and discussing Boyd's work. I am, of course, more interested in the possibility that lysis-inhibition is a feature of Boyd's experiments, than the less likely notion that Boyd's suggestion of heterogeneity will explain T2r⁺.

I am not clear as to your conceptual objection to this notion but hope that we can get together and talk about it. I did not mean to suggest that the lysogenic equilibrium is itself one of lysis-inhibition, but rather that this is the first step in keeping intact bacteria and phage growing together long enough for lysogenicity to develop. But anyhow, Esther has been working on this aspect for some time (since before Boyd's paper). She does not confirm Boyd's result in detail, for the K-12 system. But the picture is very complicated, and will have to be straightened out by single cell studies, which we are preparing to do.

Could you pass a message to Lu? I ran across a paper by Yang and White (J. Path. Bact., 38: 187-200, 1934.) In an appendix by White, there is a discussion of experiments on the mechanism of resistance to phage in *V. cholerae*. He notes the variability of numbers of resistants from culture to culture, and comments that this is evidence of mutational origin. He also set up some selection experiments of more or less indirect sorts, and succeeded in obtaining resistants by treatment with either antiserum+complement or with agglutinating saline. It is a rather crude anticipation, but may be of some historical interest in connection with Luria and Delbruck, 1943 (Genetics).

Sincerely,

Joshua Lederberg